MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2022/2023 (TERM 2220)

DWM5221 – WIRELESS AND MOBILE TECHNOLOGY

(DIT)

10 JULY 2023
2.30 p.m. – 4.30 p.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of **2** pages (excluding cover page) with **2** sections.
2. Answer **ALL** questions.
3. Write your answers in the answer booklet provided.

Section A: Fill in the blanks (Total: 10 Marks)

Instruction: *Fill in the blanks with the terms given in the table. Write your answers in the answer booklet provided.*

Park	Frequency Division Multiple Access	Mobile operating system	Wireless Wide Area Networks	ZigBee
Mobile medicine	Coherent infrared	Basic service set	Mobile science	Sniff
Wireless Local Area Networks	Privacy	Cell sectoring	Integrity	Diffused infrared

1. The applications of _____ include health monitoring, medical record access and mobile medical examination. [1 Mark]

2. The growth of _____ is evident from traditionally supporting paging networks and satellite systems to including cellular networks which support cellular phones to other handheld devices. [1 Mark]

3. With _____, the radio spectrum is divided into a number of channels and different channel is assigned for each direction of transmission. [1 Mark]

4. _____ was generated by an LED and was successfully used in mobile equipment since the signal can be reflected from walls and ceilings before being received. [1 Mark]

5. _____ is a collection of stations competing for access to a shared wireless medium. [1 Mark]

6. Slave devices listen to the Piconet at a reduced rate meanwhile master device designates certain slots to transmit to slave devices in _____ state. [1 Mark]

7. _____ is a technology that addresses the market needs for cost-effective, standards-based wireless network that supports low data rates, low power consumption, security, and reliability, based on IEEE 802.15.4 standard. [1 Mark]

8. With _____, cells are divided into a number of wedge-shaped sectors, each with their own set of channels. [1 Mark]

9. _____ is the software responsible for managing, exporting and arbitrating the hardware resources provided by terminals. [1 Mark]

10. _____ is referred to as confidentiality of information when transmitting it over a network or storing it in an insecure place. [1 Mark]

Continued...

Section B: Structured Questions, 3 Questions (Total: 30 Marks)
Instruction: *Answer **ALL** the questions in the Answer Booklet provided.*

QUESTION 1 (10 Marks)

a) Discuss any **THREE (3)** differences between first and second generations of wireless technologies. [3 Marks]

b) Explain Infrared LANs. [4 Marks]

c) State the problems of collocated but unrelated Radio LAN. [3 Marks]

QUESTION 2 (10 Marks)

a) Briefly explain the approaches of connecting to a Piconet. [3 Marks]

b) Discuss Time Division Multiple Access (TDMA) approach in Bluetooth and 802.11 devices. [4 Marks]

c) State the advantages of digital communications for second generation (2G) cellular network. [3 Marks]

QUESTION 3 (10 Marks)

a) Distinguish between reflection and diffraction as propagation mechanisms. [4 Marks]

b) Explain the role of wireless middleware. [3 Marks]

c) Describe Denial of Service. [3 Marks]

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